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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KRAMER, DEVON C

ART UNIT

PAPER NUMBER

3683

DATE MAILED: 04/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/073,520

Applicant(s)

DAIGRE, RICHARD

Examiner

Devon C Kramer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-550)
- 6) ☐ Other: ____.

CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER

DETAILED ACTION

Drawings

1) New corrected drawings are required in this application because the current drawings appear to be informal and there seems to be some elements missing such as "outer race 66". Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

2) The disclosure is objected to because of the following informalities:

Page 1 of the specification contains numerous errors which are a few examples of the numerous occurrences of errors throughout the specification.

Page 1 line 12 reads, "Certain of these mechanisms". "This is unclear English;

Page 1 line 14 reads, "For example ring gear to a case" This is unclear;

Page 1 line 16, reads "Additional example an input shaft". This is unclear.

These are some examples of numerous errors throughout the specification.

Applicant is asked to review the specification and correct further errors paying attention to references to the drawings for a clear representation of the invention.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3) The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4) Claims 7 and 34-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "said thickness" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 is unclear when citing, "said thickness is saturated within said surface". Saturated with what?

Claim 34 recites the limitation "the inner race" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 35 recites the limitation "device". This limitation is indefinite because a device can be any number of parts.

Applicant claims are extremely broad and are capable on reading on hundreds of classes throughout the office. The examiner recommends that applicant amend the claims to clearly claim what applicant deems the invention.

Claim Rejections - 35 USC § 102

5) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6) Claims 1-3, 6, 9-14, 16-21, 24-28, and 31-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Pringle (4805744).

In reference to claim 1, Pringle provides a selectively engagable friction mechanism comprising two parts and a housing (14), one of which (18) is rotatable in respect to the other (16) and the housing, at least two friction disks (44, 46), one of said two friction disks being non-rotatively connected to one of the two parts, the other of said two friction disks being non-rotatively connected to the other of the two parts, said one of said two friction disks having a single cross-section, said one of said two friction disks having a surface, said surface being hardened and engagement means (50) to engage said one with said other of said two friction disks so as to connect the two parts. Please note that the friction disks are all hardened to some extent to extend their service life.

In reference to claim 2, Pringle provides a selectively engagable friction mechanism characterized by the addition of attachment means to non-rotatively connect said one or said other part to the housing such that said engagement means functions as a brake for said other or said one part respectively. Please note that Pringle inherently has some attachment means to attach the disks to the non-rotatable portion though it is not labeled in the drawings.

In reference to claim 3, Pringle provides a selectively engagable friction mechanism of characterized in that both of the two parts are rotatively connected to the housing such that said engagement means functions as a clutch between the two parts.

In reference to claim 6, Pringle provides a mechanism characterized in that there are five or more friction disks (figure 1).

In reference to claim 9, Pringle provides a mechanism characterized in that said engagement means includes a piston (50, 96), said piston being located in a cavity, said cavity being located in the housing adjacent to said friction disks, said piston having actuated and non-actuated positions relative to said friction disks; a bias assembly (94), said bias assembly engaging both said piston and said housing and including a single spring, said bias assembly biasing said piston into either of said actuated or non-actuated positions; a pressurization means, said pressurization means moving said piston into the other of said actuated or non-actuated positions.

In reference to claims 10 and 17, Pringle provides a mechanism characterized in that said spring has an inner edge and an outer edge, said inner edge contacting either of said piston or said housing, and said outer edge contacting the other of said piston or said housing (figure 1).

In reference to claims 11 and 18, Pringle provides a mechanism characterized in that the spring is a Belleville spring.

In reference to claims 12, 19 and 26, Pringle provides a mechanism characterized in that at least one washer is located intermediate between said spring and said housing.

In reference to claims 13-14, 20-21 and 27-28, Pringle provides a mechanism characterized in that said actuated position is synonymous with the brake being engaged or disengaged, depending on what applicant deems as engaged or disengaged.

In reference to claims 16, Pringle provides a mechanism comprising a shaft (10) and a housing (12), said shaft being selectably rotatable in respect to said housing; a multiplicity of friction disks, said friction disks being non-rotatably connected to said shaft, said friction disks having an engagement surface, said engagement surface having a single cross section; a multiplicity of reaction disks, said reaction disks being non-rotatably connected to said housing, said friction disks being interleaved with said reaction disks; a piston, said piston being located in a cavity, said cavity being located in said housing adjacent to one of said friction or said reaction disks, said piston having actuated and non-actuated positions relative to said one of said disks; a bias assembly, said bias assembly engaging both said piston and said housing and including a single spring, said bias assembly biasing said piston into either of said actuated or non-actuated positions; and a pressurization means, said pressurization means moving said piston into the other

of said actuated or non-actuated positions. Please see previous claim rejections for reference numerals.

In reference to claims 24 and 31, Pringle provides a mechanism characterized in that said shaft is interconnected to a drive mechanism.

In reference to claims 25, Pringle provides a selectively engagable friction mechanism comprising a shaft and a housing, said shaft being selectably rotatable in respect to said housing; a multiplicity of friction disks, said friction disks being non-rotatably connected to said shaft, said friction disks being composed of an anodized metal and having an engagement surface, said engagement surface having a single cross section; a multiplicity of reaction disks, said reaction disks being non-rotatably connected to said housing, and said friction disks being interleaved with said reaction disks; a piston, said piston being located in a cavity, said cavity being located in said housing adjacent to one of said friction or said reaction disks, said piston having actuated and non-actuated positions relative to said one of said disks; at least two seals, said seals being located in said piston and contacting said housing so as to provide at least one pressurizable chamber within said cavity; a means of selectably pressurizing said at least one chamber said means allowing movement of said piston into either of said actuated or non-actuated positions; a bias assembly, said bias assembly engaging both said piston and said housing and including a single spring; said spring having an inner edge and an outer edge, said inner edge being radially displaced from said outer edge,

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said inner edge contacting either of said piston or said housing, and said outer edge contacting the other of said piston or said housing; and said bias assembly biasing said piston into the other of said actuated or non-actuated positions. Please see previous claim rejections for reference numerals.

In reference to claims 32, Pringle provides a selectively engagable friction mechanism comprising a shaft and a housing, said shaft being selectably rotatable in respect to said housing; a multiplicity of friction disks, said friction disks being non-rotatably connected to said shaft, said friction disks being composed of an anodized metal and having an engagement surface, said engagement surface having a single cross section; a multiplicity of reaction disks, said reaction disks being non-rotatably connected to said housing, there being an equal number of said friction disks and said reaction disks, said friction disks being interleaved with said reaction disks; a piston, said piston being located in a cavity, said cavity being located in said housing adjacent to said reaction disks, said piston having actuated and non-actuated positions relative to said reaction disks; three seals, said seals being located in said piston and contacting said housing so as to provide two pressurizable chambers within said cavity; a means of selectably pressurizing at least one of said chambers, the pressurization of either of said chambers allowing movement of said piston into either of said actuated or non-actuated positions; a bias assembly, said bias assembly engaging both said piston and said housing and including a single spring; said spring having an inner edge and an outer edge, said

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inner edge being radially displaced from said outer edge, said inner edge contacting either of said piston or said housing, and said outer edge contacting the other of said piston or said housing; at least one washer, said washer being located between said spring and said housing; and said bias assembly biasing said piston into the other of said actuated or non-actuated positions. Please see previous claim rejections for reference numerals.

In reference to claims 33-35, Pringle provides a mechanism having a shaft and a bearing, there being a movable part surrounding the shaft, the improvement means for the movable part to contact the bearing to provide a bearing stop.

Claim Rejections - 35 USC § 103

7) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8) Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pringle in view of Kumagai et al (5701976).

Pringle lacks the teaching of a multi-disk brake used in a transmission.

Kumagai et al teaches the use of a multi-disk brake used in an environment including a planetary device having a sun gear, planet gears with a carrier and a

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ring gear characterized in that a part of the two parts coincides with a gear or carrier of the planetary device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the multi-disc brake of Pringle in the environment as taught by Kumagai merely to provide an alternate environment of use for the brake, that of which is known in the art.

9) Claims 7-8, 15, 22-23, 29, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pringle in view of Naumann et al (6302246).

Pringle lacks the teaching of an anodized surface or an oxide ceramic.

Naumann (6302246) teaches a surface that is hard anodized and a surface that is coated by a complex oxide ceramic

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the friction surfaces of Pringle with the treated surfaces as taught by Naumann because it is common in the art to treat friction surfaces in order to improve their wear properties.

Conclusion

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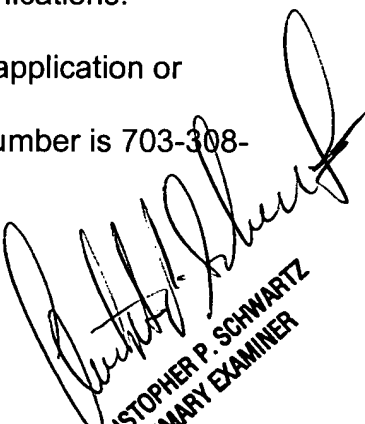
10) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dover, Rogier, DeWald et al, Klaue (5253737), Klaue (5366046), Horsch, Boehringer et al, White (6170616), White (6145635) and Case et al all provide multi-disk brakes.

11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devon C Kramer whose telephone number is 703-305-0839. The examiner can normally be reached on Mon-Fri 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-3519 for regular communications and 703-308-3519 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1134.

DK
April 21, 2003


CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER